

Transport Related Air Pollution in Georgia

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Background Information

- Transport and industry are the main fields that impact Georgia's environment;
- The expansion of environmental policies and their execution varied widely within these sectors during the past decade. But the leadership of the transport sector, especially in urban areas, as a main air polluter has stayed unchanged.

Background Information

- Tbilisi, with its population of about one and a half million is home for more than 30 per cent of the population of Georgia.
- The urban population in Georgia continues to increase and Georgian cities continue to show signs of environmental stress - poor air quality, excessive noise, traffic congestion, loss of green areas and degradation of historical buildings and monuments. Many stresses, especially from transport, are increasingly leading to deterioration in the quality of life and human health.

Statistical Data

- Four fifths of Tbilisi air pollution results from motor transport.
- Some part of it origins due to poor traffic management and bad driving habits and the other part is due to the insufficient technical condition of vehicles.
- The capital is overloaded by transport nowadays. Most of the vehicles are 10-15 years old. The number of Soviet-made models has decreased, mainly replaced by second-hand European vehicles. There are no restrictions on the age of vehicles on road, even for public transport.
- In 2000, there were about 80 vehicles per 1000 inhabitants. In July 2005 according to the information received from the Department of Patrol Police there are about 100 vehicles per 1000 inhabitants.

***Number of registered motor vehicles in Georgia
(end of year; thsds.)***

Years	Motor Vehicles Total	Of Which:			
		Lorries and Trucks (Including Pick-Ups and Vans)	Buses and Minibuses	Special	Passenger Cars
2000	313,7	47,0	19,8	2,1	244,8
2001	319,6	47,0	22,7	2,1	247,8
2002	323,6	45,5	24,1	2,0	252,0
2003	325,0	42,9	25,7	1,2	255,2

- Tbilisi, especially the city centre, was not designed to accommodate the current number of vehicles.
- The river valley, which gives the city a linear structure prevents operation of a large number of vehicles, as well as a good dispersion of air pollutants.
- Insufficient organization of traffic and parking increases congestion.

Emissions from Vehicles

- Available data indicate that mobile sources are responsible for an increasing share of total air emissions, from about 70% in 1991 to about 91% in 2004. Mobile sources contributed 31% of the dust, 37% of SO₂, 82% of NO_x, 90% of the non-methane volatile organic compounds (VOC), and 98% of CO in 2004. Transport is also contributing an increasing share of CO₂. There are no routine data available on other important transport sector emissions, such as ozone (O₃), noise or persistent organic compounds and heavy metals, such as lead (Pb) and polycyclic aromatic hydrocarbons (PAHs). For a number of reasons (e.g. age and origin of the vehicles and deficient fuel-control system, vehicle - control system, traffic circulation management and public transport management), vehicles in Georgia generate very dirty emissions.

Public Transport

- In the past Tbilisi had well-developed system of public transport represented by: trams, trolleys, buses, mini-buses, taxis, underground.
- The case today is quite the opposite. The majority of transport is now privately owned or rented. Big buses which were the base of old transportation system partly gave way to smaller ones minibuses so-called "Marshrutka" with up to 12 sitting places, which are the most popular transport today.
- Increased number of minibuses, the narrow main roads, the age and poor condition of passenger cars and the traffic contribute to noise pollution. Traffic jams are very frequent at the crossroads, and intensified by the traffic lights

Public Transport

- In Tbilisi for different reasons alternative transport is not developed enough. Because of landscape the city is not applicable for bicycles, at least for wide use of them (Asian mentality is a sufficient obstacle itself). Electrical or alternative private cars have not been developed and the electric public transport widely presented and quite popular in the past (metro, trolley buses, tramway) suffers from shortages in electricity supply, bad maintenance and high age of the existing vehicle park. So, as a result, nowadays both the private and the public transport are represented by fuel-consuming vehicles.

The Main Stakeholders (Horizontal)

Governmental Institutions:

- Ministry of Environment
- Ministry of Health
- **There is no Ministry of Transport any more**

Transport Sector:

- Department of Transport under the Ministry of Economic Development - elaboration of state policy regarding transport sector;
- Department for Roads under the Ministry of Economic Development - road maintenance;
- Tbilisi Municipality - responsible for spatial planning and public transport regulation in the Capital
- Road Transport Administration (Independent National Regulative Body) - Organization and management of certification system in the sector, licensing body;
- Department of Patrol Police - traffic safety, vehicle registration and inspection.

Ministry of Environment and Ministry of Health

- MoH is responsible for determination of marginal permissible concentrations of pollutants in ambient air
- MoE is responsible for determination of threshold values for air emissions of pollutants.
- The Ministries act independently and very often the permitted emission standard for each pollutant does not correspond to the concentration standard of the same pollutant.
- None of the Ministries have the exact picture of air pollution impacts on public health.

**Problem of uncoordinated activities of the institutions –
low level of information exchange**

Lack of inter-sectored integration

- Tbilisi municipality is slowly bringing more order to the public transport system during last 2 years. The “new” buses were imported from The Netherlands with intention to replace minibuses (one large bus can replace four or five minibuses). But this process was carried out without study of public transport demand.
- With the decision of the municipality the main avenue of Tbilisi is announced as a transport free area on Sundays. Thus, all transport moves through parallel streets, which are quite narrow with low carrying capacity. On Sundays the noise level and air pollution level are increasing in this area. It’s evident, that issues of Environment and health were not taken into account.

Lack of inter-sectored integration

- Also by the decision of the municipality movement of mini buses are not allowed on the main central streets - they should be replaced by big buses. This activity seemed to be very important for reducing air pollution from transport emissions in central area, but the decreased number of mini buses move now through the parallel streets and avenues. So, in total the environmental conditions of the city are not changed. It would be mentioned that environment and health sectors as well as the public were not involved in the decision - making process.

Lack of inter-sectored integration

- In order to optimize transport movement in the city center, by decision of the Municipality the so-called “Triangle” rout was arranged for single direction movement in the most loaded area. The environment and health sectors like previous cases were not involved in the decision - making process. After that there were measured 4 components in 3 sites around the so-called “Triangle”. The results exceed the limited values of concentration in all 3 sites, but since no measured data existed before this new arrangement, we are not able to judge about efficiency of this project.

Measured values of pollutants in so-called “Triangle”


N	Location	Concentration (mg/m ³)			
		PM	CO	NO ₂	Lead
1	Costava str.	3.6	12	0.13	0.00025
2	Varaziskhevi	3.4	12	0.15	0.00038
3	School #51	2.6	5	0.12	0.00055

Main Obstacles of Sustainable and Healthy Transport Development

- Lack of integration among three sectors – Transport, Environment and Health;
- No vehicle emission control system;
- Insufficient traffic management system and still weak public transport sector;
- Lack of reliable data on transport-related air pollution;
- Lack of information on health of exposed population;
- Insufficient Legislation and lack of enforcement tools;
- Low public awareness on the problem.

Improvement of Policy Coordination among various Sectors

In order to improve coordination and cooperation among different bodies responsible for sustainable environment, health and transport, the first step should be establishment of permanent inter-agency/ministry coordination unit at national level.



Thank you for your attention !